

SmartWay Transport Partnership



Improving the Environmental Performance of Freight Transportation

August 26, 2005

Summary

- **Freight Related Mobile Emissions** – represents the bulk of mobile source emissions (truck, rail)
 - In trucking, small companies represent two-thirds of all freight activity
- **Financial Obstacle** – these small companies lack financial ability to invest in innovative technologies that reduce emissions and conserve fuel
- **SmartWay Transport Upgrade Kits** – combination of emission reduction device (e.g., DPF) and energy saving devices (e.g., idle controls)
- **Capitalization** - offering low-interest or no interest loans for “Upgrade Kits” that result in a return of investment in a short period

Introduction to SmartWay Transport Partnership

- **Goal: To improve the environmental performance of freight transportation**
 - Fuel savings/energy efficiency: CO₂
 - Air Quality: NO_x, PM
- **Looking at improvements on various levels:**
 - Company by company (truck by truck)
 - Infrastructure and intermodal issues
- **Three major SmartWay Transport components:**
 - Corporate Partnerships
 - National Transportation Idle-Free Corridors
 - Rail/Intermodal Operations

Corporate Partnerships

- **Goal: To create a demand for improved environmental performance in freight delivery services**
 - Shippers hire carriers that commit to improve
- **180 SmartWay Partners**
 - 143 carriers, 22 shippers, 6 shipper-carriers, 2 logistics, 7 rail

	Industry Totals	SmartWay Partners	% Industry
Total No. of Companies	500,000	180	0.03%
# of Trucks	7,000,000	254,295	3.63%
Gallons Consumed	35 billion	2.26 billion	6.46%
Tons CO ₂	385,000,000	24,714,834	6.42%
Tons NO _x	2,805,659	225,596	8.00%
Tons PM	90,303	5,278	5.84%

Idling Control

- **Goal: To eliminate all unnecessary diesel engine idling**
 - Truck stops, travel centers, rail yards, loading docks, markets, side of the road
- **2004: \$1 Million grant program for 9 TSE locations**
- **2005: \$5 Million grant program**
 - All requests for proposal due June 6th, 2005
 - Received approximately 30 proposals so far
 - Will fund small businesses, TSE locations, and OEM designs
- **Hosting workshops to create model idling law**
 - Create consistency among the various state and local idling laws
 - Baltimore (May 6th), Atlanta (June 16th, 17th), Chicago (June 28th)
San Francisco (July 14th), Region 1 & 2 (July 27th)
- **Hosting workshops to create standardized design specifications for idling control systems:**
 - Power, voltage, safety considerations, wiring, and plugs

Rail & Intermodal Operations

- **Goal: To improve the environmental performance of rail systems and to promote appropriate inter-modal opportunities**
- **Seven Class I Railroads joined SmartWay on May 25th, 2005**
 - Announcement made at annual John Chafee awards
 - Union Pacific, CSX, Burlington Northern Santa Fe Railway, Kansas City Railway Company, Canadian Pacific Railway, Norfolk Southern Corporation, Canadian National
 - Opens the door for Class 2 and 3 railroads to join
- **Intermodal shifts can deliver major emission reductions**
 - Generally, 3 – 9 times less emissions than trucks doing the same work

Rail & Intermodal Operations

Intermodal Example:

- **The Companies**

- The Manufacturer: Mills Pride Cabinets
- The Logistics company: Hub Group (SmartWay Partner)
- The Retailer: The Home Depot (SmartWay Partner)

- **The Change**

- The Hub Group helped Mills Pride switch from truck shipments of cabinetry to custom 60-foot railcars.
- The cabinets are shipped from a midwest plant location to a rail-served warehouse in Los Angeles.
- Hub Group built proprietary load designs that could load more than three truckloads into each rail car.

- **The Results**

- Through the use of intermodal shipping, Hub Group delivered cabinetry products on-time and intact, eliminated capacity constraints, reduced emissions, and reduced costs.

- **Annual Reductions and Savings Estimates:**

- 1 million gallons of diesel
- 11,000 tons CO₂
- 263 tons NO_x
- 8 tons PM (equivalent to PM filter retrofits on 400 Class 8B trucks or 1,600 buses)

Marketing

BE PART OF THE BIG PICTURE FOR CLEANER AIR



As SmartWay® Partners, manufacturers can lower emissions and fuel costs by 7% or more.

CALCULATE YOUR SAVINGS TO THE ENVIRONMENT. TO YOUR BOTTOM LINE.



For logistics managers, SmartWay® can add up to 7% in fuel savings.

ATTENTION SHIPPING CUSTOMERS



Shopping for the smartest way to transport your products? Ship SmartWay® and save 7% on fuel.

SmartWay®Transport helps shippers and for-hire carriers lower greenhouse gases and other emissions, while at the same time giving the average truck a fuel savings of \$2,000 per year.

To find out more about this new partnership, call for your info kit at 1-734-214-4767 or log onto www.epa.gov/smartway.



A new voluntary program from the U.S. Environmental Protection Agency

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SHIP SMARTER



An environmentally appealing way to transport goods that's also deliciously profitable.

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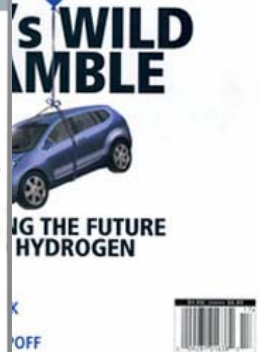
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Marketing





Capitalization & Deployment of SmartWay Trucks

A 3 Legged Stool for Maximum Deployment:

To aggressively promote and deploy these types of trucks:

1. The Technology Package

- Tires, aero, idling, catalyst or filter

2. Innovative Air Quality Guidance for PM and NOx Emission Reductions

- Handle interstate trucking (trucks moving in and out of non-attainment areas)
- Quantifies the NOx reductions resulting from FE improvements

3. Innovative Funding

- Create business plans that include PM control technology among a collection of fuel saving technology. NOx reductions come with the FE
- State programs, CMAQ, ESCO loans, banks, federal

1. The Technology Package: SmartWay Upgrade Kits with Oxidation Catalysts

Some options for SmartWay upgrade kits:

I. High FE Truck w/ Oxidation Catalyst:

Device	Cost/Unit (Retrofit)*	PM Reduction	NOx Reduction	FE Change
Oxidation Catalyst	\$1,500	25%	--	--
Super Single Tires w/ alum. wheels	\$4,000	--	8%	8%
Trailer Aero Kit	\$3,200	--	12%	12%
Direct Fired Heater	\$800	--	19%	19%
Totals:	\$9,500	25%	19%	19%

For a truck traveling 100,000 miles/year @ 6 mpg (16,667 gallons /year)

Fuel savings: 3,100 gallons @ \$2/gallon → **\$6,200/year**

Payback period: \$9,500 / \$6,200 → **1.5 years**

**Costs drop as technology is applied at OEM level (especially for tires)*

1. The Technology Package: SmartWay Upgrade Kits with PM Filters

Some options for SmartWay upgrade kits:

2. High FE Truck w/ PM filter:

Device	Cost/Unit (Retrofit)*	PM Reduction	NOx Reduction	FE Change
PM Filter	\$6,000	80%	--	-1%
Super Single Tires w/ alum. wheels	\$4,000	--	7%	7%
Trailer Aero Kit	\$3,200	--	11%	11%
Direct Fired Heater	\$800	--	18%	18%
Totals:	\$14,000	80%	18%	18%

For a truck traveling 100,000 miles/year @ 6 mpg (16,667 gallons /year)

Fuel savings: 3,000 gallons @ \$2/gallon → **\$6,000/year**

Payback period: \$14,000 / \$6,000 → **2.3 years**

**Costs drop as technology is applied at OEM level (especially for tires)*



SmartWay Transport Partnership

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Smartway Technology Package Calculator

The following page allows you to test different technologies that can be placed on your truck or a truck in your fleet. Notice that most of these technologies save you more each month than your loan payment.



Equipment	Cost	% Fuel Savings	Annual Fuel Savings	Gross Monthly Fuel Savings	Monthly Loan Payment	Net Monthly Savings
APU, Wheels, Aero, ATI, DOC	\$15600	17.6%	\$7128	\$594	(\$359)	235

Step 1: Change the below information to reflect your truck or fleet.

Calculate your Costs and Assumptions

Annual Fuel Use (gallons)	<input type="text" value="18000"/>
Cost of Fuel	<input type="text" value="\$ 2.25"/>
Annual Idling (Hours)	<input type="text" value="2400"/>
Loan Period (Months)	<input type="text" value="48"/>
Loan Interest Rate	<input type="text" value="5.00"/> %
Yearly Fuel Cost	\$40500
Monthly Fuel Cost	\$3375

[Return to Default Values](#)

[Clear](#)

Step 2: Please Select which Technologies best meet your needs.

SmartWay Technology

SmartWay Technology	Cost
<input type="checkbox"/> Bunk Heater (Heater)	\$1000
<input checked="" type="checkbox"/> Auxiliary Power Unit (APU)	\$7000
<input checked="" type="checkbox"/> Aluminum Wheels Units for Single Wide Tires (Wheels)	\$3500
<input checked="" type="checkbox"/> Trailer Aerodynamics (Aero)	\$3200
<input checked="" type="checkbox"/> Automatic Tire Inflation (ATI)	\$900
<input checked="" type="checkbox"/> Oxidation Catalyst (DOC)	\$1000

2. Innovative Air Quality Guidance Interstate Trucking

- Long haul class 8 trucks produce more emissions than any other diesel class, however:
 - They are the most difficult to credit because they are interstate
 - Because they are difficult to credit, CMAQ money has been unavailable
- Historical obstacle has been demonstrating the amount of time a truck operates in a state or nonattainment area
 - Can't rely on GPS or RFID technology pinpointing where trucks are at all times: too burdensome to industry and EPA
 - Need a more creative solution
- New air quality guidance could:
 - Encourage multi-state funding of SWT Upgrade Kits (e.g., multi-state CMAQ awards for trucks traveling I-95)
 - Allow States to 'share' air emission credits in SIPs or Transportation Conformity
 - Quantify the NO_x benefits of improving fuel economy
- Tentative Schedule: Spring, 2006

3. Innovative Funding

Financial Projects We are Pursuing

- Major national press event to release a series of financing programs this summer
 - **State Based Programs:**
 - Programs we have built: Arkansas, Minnesota
 - Programs in development: Oregon, California, and Texas
 - **National Programs:**
 - We are creating a National SmartWay Innovative Technology Financing Program
 - \$450,000 of EPA money will go to a sub-contractor for implementation
 - Other participants: Michelin, Environmental Defense, NRDC, ACEEE, Alliance to Save Energy, ATA, OOIDA
 - **Private, Banks, and Foundations:**
 - Chiquita, Dole, and Wachovia Bank to provide capital for produce trucks
 - ATA members, banks request TIFIA (\$100 million minimum)

3. Innovative Funding

SIBs, Section 129 Loans, & TIFIA

- State Infrastructure Banks (**SIBs**) are revolving infrastructure investment funds for surface transportation that are established and administered by states.
 - SIBs may be capitalized with regular Federal-aid highway apportionments and state funds
 - Offer a range of flexible financial assistance, including loans and various forms of credit enhancement
- **Section 129** loans allows states to use regular Federal-aid highway apportionments to fund direct loans to projects with dedicated revenue streams
- Transportation Infrastructure Finance and Innovation Act (**TIFIA**) allows DOT to provide direct credit assistance to sponsors of major transportation projects
 - Credit assistance can take the form of loans, loan guarantees, or lines of credit
 - Total amount of credit can't exceed 33% of eligible project costs

SIBs:

A Closer Look

- According to DOT, SIBs can fund anything that CMAQ could fund
- However, state has control of SIB
 - Some have state legislation limiting use
 - Some are simply not familiar with the benefits of these projects
- Relationships between our diesel programs and SIB officials are not well developed
 - They don't know us or our programs
- SIB Loan Agreements as of June 30th, 2004

State	Number of Agreements	Loan Agreement Amount (\$000)	Disbursements to Date (\$000)
Alaska	1	\$ 2,737	\$ 2,737
Arizona	45	521,442	418,825
Arkansas	1	31	31
California	2	1,120	1,120
Colorado	4	4,400	1,900
Delaware	1	6,000	6,000
Florida	46	741,337	256,675
Indiana	2	5,715	5,715
Iowa	2	2,879	2,879
Maine	23	1,635	1,635
Michigan	33	22,207	22,207
Minnesota	15	95,719	77,013
Missouri	15	92,557	82,770
Nebraska	2	6,792	6,792
New Mexico	2	14,600	14,600
New York	10	27,700	27,000
North Carolina	2	1,713	1,713
North Dakota	2	3,891	3,891
Ohio	59	203,132	130,953
Oregon	15	19,846	18,396
Pennsylvania	47	31,000	27,000
Puerto Rico	1	15,000	15,000
Rhode Island	1	1,311	1,311
South Carolina	8	2,605,000	1,765,000
South Dakota	3	28,776	28,776
Tennessee	1	1,875	1,875
Texas	46	259,260	250,683
Utah	1	2,888	2,888
Vermont	2	1,975	1,300
Virginia	1	18,000	17,985
Washington	3	2,376	487
Wisconsin	3	1,813	1,813
Wyoming	8	77,977	42,441
TOTAL	407	\$4,822,704	\$3,240,111